

Notice of Allowability	Application No.	Applicant(s)	
	09/242,561	SATO, YOSHIHIRO	
	Examiner	Art Unit	
	BJ Forman	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendments filed 20 March 2003.
 2. ☒ The allowed claim(s) is/are 34 and 37-39.
 3. ☒ The drawings filed on 19 February 1999 are accepted by the Examiner.
 4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) ☐ The translation of the foreign language provisional application has been received.
 6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____. |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____. | 6 <input type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

Notice of Allowance

1. This action is in response to papers filed 20 March 2003 in which
 - a. claim 34 was amended;
 - b. the specification was amended to add a first paragraph, to capitalize trademarked names and to correct typographical errors;
 - c. the title was changed to define the invention; and
 - d. the abstract was amended to correctly describe the invention in 150 words or less.

All of the amendments have been thoroughly reviewed and entered. The previous rejections and objection in the Office Action dated 23 December 2002 are withdrawn in view of the amendments. The amendments place the claims in condition for allowance.

Claims 34 and 37-39 are in condition for allowance.

Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance:

The claims are drawn to a process for conducting a PCR reaction in a minute droplet of an aqueous solution protected from evaporation. The method comprises the steps of providing a plate substrate, an oily liquid layer and a aqueous solution immiscible with the oily layer; shooting a minute droplet of the aqueous solution by inkjet into the oily layer to contact the substrate wherein the oily layer surrounds all surfaces of the droplet not in contact with the

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substrate, providing the droplet with a reactant and conducting a PCR reactions whereby the reaction is protected from evaporation.

Drohan et al. al. (U.S. Patent No. 5,589,604, issued 31 December 1996) teach a method for reducing evaporation in minute droplet (i.e. embryo) comprising similar steps of providing a planar substrate (petri dish) an oily liquid layer (silicone oil covering the microdroplet) and an aqueous solution (DNA solution); shooting a minute droplet of said aqueous solution into said oily layer (microinjecting the DNA into the embryo) (Column 9, lines 32-45). However, Drohan et al do not teach the microinjection is via ink jet nor do they teach or suggest using their microinjection technique for conducting a PCR reaction.

The instant claims are drawn to a PCR reaction by shooting via inkjet an aqueous solution into an oily liquid layer to thereby protect the PCR reaction from evaporation. As such, the prior art of record does not teach or suggest the claimed invention.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Claims 34, 37-39 are allowed.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878. The examiner can normally be reached on 6:30 TO 4:00.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.



BJ Forman, Ph.D.
Patent Examiner
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June 5, 2003